Episode 59: Wrestling with Risk

Chris Dall: [00:00:05] Hello and welcome to the Osterholm Update, covid-19, a weekly podcast on the covid-19 pandemic with Dr. Michael Osterholm. Dr. Osterholm is an internationally recognized medical detective and director of the Center for Infectious Disease Research and Policy, or CIDRAP, at the University of Minnesota. In this podcast, Dr. Osterholm will draw in more than 45 years of experience investigating infectious disease outbreaks to provide straight talk on the covid-19 pandemic. I'm Chris Dall, reporter for CIDRAP News, and I'm your host for these conversations. Welcome back, everyone, to another episode of the Osterholm Update podcast. This week on the podcast, as the United States settles into its summer of re-opening, we're going to take a look at the growing divide between the vaccinated and the unvaccinated and how that divide will impact the trajectory of the pandemic, both globally and domestically. Does the lack of vaccines in many parts of the world mean more dangerous variants are in our future? Will the G7's vaccine pledge be enough to curb the continuing spread of the virus and some of the most vulnerable countries in the world? And does vaccine hesitancy in the US mean that an increase in infections is inevitable come fall? We'll also discuss the latest news in the highly transmissible Delta variant, examine vaccine mandates on college campuses, and answer some Covid queries from our listeners. But first, we'll begin with Dr. Osterholm's opening comments and dedication.

Michael Osterholm: [00:01:34] Thank you, Chris. And welcome back, everyone, to another episode of the podcast. We welcome any newcomers and in particular, we welcome back our podcast, Family Members. We're adjusting to this every two week podcast as opposed to every week edition. I can tell you that the amount of information doesn't slow down in two weeks versus one. And so it's a more of a challenge for us to try to focus on those issues, which we think we can put into the podcast in a timely way and at the same time make it short enough so that you will have a reason to want to listen to it. But welcome back. We've missed you. I have to tell you that the letters, the cards, the emails have continued to come in with all kinds of feedback. And it's such a gift to us. And so thank you. Thank you. Thank you. And today I will close the podcast on and in a way of talking about that very issue of what that means. Let me start out by saying that I am going to end the light segment. For some of you this will be a welcome relief. For others of you, you enjoyed going from that very, very dark period of December to this past week of the summer solstice and the longest days of the year.

And for those in the southern hemisphere, you now have hope, because now that we've passed that summer solstice in the United States, you are now just passing your winter solstice and you will, in fact, start seeing that increase in sunlight. So that's done. Everyone can rest assured. But, you know, I can't have a podcast without something. And so I'm asking you to now to think about submitting a very short, could be several sentences, a paragraph, about someplace beautiful that you've been. It could be something graphically beautiful, like the Grand Canyon or wherever, and just describe what it meant. Or it can be beautiful in the sense of you just visited that oak tree out in the middle of a field where your grandpa and grandma sat one night as your grandpa proposed to your grandma, you know, something special. And I think it would be fun to share that with the audience here, given our often heavy, heavy discussion. I think these kinds of issues are really very helpful. So, so welcome back, everyone, and thank you for being with us. And hopefully today we can distill down the ever growing complex information around this pandemic and give you a sense of where we think it's going. And in terms of dedication today, we want to reflect upon so much of the world that is waiting for vaccine. We are blessed in this country not only to have a vaccine, but an abundance of vaccine. And a number of countries around the world, primarily, those are high income countries, have had that same access. But there are many who are literally dying every day because they don't have access to this vaccine. So we dedicate this to all of the world that wants to have the vaccine in their arm today and see no future of that vaccine coming. So it's a reminder to us as we talk about this today, this pandemic won't be over with until it's over with throughout the world. And that means that we have to get vaccine to the rest of the world. So this is dedicated to you.

Chris Dall: [00:05:03] Mike, while cases have declined globally for eight weeks now, many parts of the world are in the midst of their worst searches of the pandemic. Cases and deaths in Africa are rising. Parts of Asia are seeing some of their highest case numbers, and Latin America continues to struggle. Are these countries and whatever mitigation efforts they're employing simply being overwhelmed by the more contagious variants?

Michael Osterholm: [00:05:29] We are now at a place we're going to be seeing these local epidemics, some of them very significant in size occurring, and then for whatever reason, four, five, six weeks later, the case number is coming down again, but then it's taking off somewhere else. And even here in the United States, we'll talk more about

that. We're not out of that scenario here yet, although we are not going to see a national surge because of the level of vaccinations, we still are going to see localized surges. But think of this on a global level, where it is basically in a world of eight billion people for which there are still many, many individuals who have not yet been infected. As you noted, Chris, this has been our eighth straight week of declines. Last week we reported just over 3 million cases compared to 5.4 Million cases eight weeks ago. During the week of June 7th, we're at 2.7 Million cases reported and June 14th, 2.5 Million. So we've come down 200,000. Much of the decline is being driven really by lower cases in Southeast Asia, particularly India. Slightly over a million cases are reported in Southeast Asia the week of May thirty first. This week is just 600,000 cases. And I say just, again I remind all of us each and every day, these are not just numbers. These are people. These are loved ones. These are our family members, our friends, our colleagues and neighbors. If you look at the global deaths in general, they're continuing to decline. This is the seventh consecutive week also we've seen that happen. Just by way of reference, prior to the last episode we were at 74,000 deaths reported during that week. Now we're seeing for weekly deaths, numbers between 72,000 and 64,000, and the numbers keep dropping. While they are declining in most regions of the world, they are continuing to report at concerning levels in Latin America and also, they are rising in Africa. If one looks at Latin America, this is part of that whack a mole piece I talked about. This is basically still house on fire. When you look at the seven day average for new daily cases in the region, they remain above 150,000 at record high levels. It is home to six of the world's top 12 countries with regard to the highest case rates. Right now, Uruguay is two, Colombia is number four, Argentina five, Brazil eight, Costa Rica 10 and Paraguay 11. The seven day new daily death average is at about 4,000 and that is down from the peak of 5,000 per day. But it still is much higher than any level recorded throughout 2020. If you look at individual countries, for example, Brazil is experiencing yet another uptick in cases and deaths, where they're already at high levels. The seven day average for new daily cases there has grown by about 15,000 Cases since our last podcast. If you look at the seven day average for deaths, it's now above 2,000 again as the country officially surpassed 500,000 total covid deaths over the weekend. Right now, Brazil is accounting for one in four of the global deaths reported each day. Two thousand Brazilians younger than 19 years of age have died from covid. We know that these numbers are underreported. There are surely many more cases and deaths than are actually even being recorded in Brazil. In terms of vaccinations, there's been some challenges here. 30 percent have had one or more doses. Only 11 percent are fully

vaccinated. The majority of doses are Sinovac, the Chinese vaccine. And it's now been raised multiple times about the concern about just how effective that vaccine is. It's notable that despite the world's second highest overall death toll from covid, only behind the US, Brazil is now hosting the Copa America soccer tournament. Since the tournament's June 13 start, not long ago, at least 140 cases have been detected among players and service providers. Half of the national teams participated in the tournament have reported cases, demonstrating how it's hard to really get us back to a normal kind of life with this situation. In terms of additional Latin American countries of concern, Colombia, in the midst of a record setting third wave with the seven day average for new cases now more than 27,000 cases per day and greater than 600 deaths. More than 100,000 covid deaths have been reported in the country, with 40,000 occurring since mid-March of this year. Also, it's interesting that Colombia is experiencing major protest against social inequality, which has been exacerbated by the pandemic, with mass marches and gatherings happening. Of note, in the article in The Guardian, it was noted that hospital networks across the country have collapsed with ICU occupancy in the three largest cities hovering around 97 percent. Earlier this month, Bogota's mayor, Claudia Lopez, advised people to avoid showing up at hospital except in the most severe cases, and begged people to avoid in-person marches and protest. Indicating that even there, the hospitalization levels are likely not accurate relative to what's happening with severe illness in the community. Same issue here with Columbia vaccination: One or more doses, 20 percent, only 9.5 percent are fully vaccinated. We look at Chile. Cases are once again in decline in Chile, which opted to lock down the city of Santiago two weeks ago following a concerning rise in cases and hospitalizations. The country has one of the highest vaccination rates too. 64 percent have one or more doses. 50 percent are fully vaccinated. Again, the situation here is the Sinovac vaccine. Just as the concerns I expressed about Brazil are also being echoed in Chile. If we go across the ocean here and look at Africa, the overall cases in the continent have increased by 31 percent in the past week. This is the sixth consecutive week of rise in cases. This past week, I was on a call with a number of health leaders from Africa throughout the entire continent, and the situations they describe are surely becoming much more dire. In their latest weekly report on Africa, the WHO stated that the pandemic is trending upwards in more than 20 countries. More than half of all the cases in the region were reported out of just five countries recording the highest level of activity. The WHO regional director for Africa stated that the sobering trajectory of surging cases should rouse everyone into urgent action. The statement was supported

by a recent BBC article, which actually detailed severe oxygen shortages throughout the entire continent, with numerous reports of patients dying solely because they lacked access to oxygen. Deaths in Africa have increased by thirty three percent over the past week, reaching a mark of 1,930. This is an important context in that for a number of months in the early days of the pandemic, people kept looking to Africa saying, why are they not being impacted? There's something unique about this: the virus, the people, whatever. And I think this is another one of the lessons we've learned is, is that in this whack a mole pandemic, why virus activity turns up substantially in a country, when it does, why it does, we just don't understand. Go back and look at India. Why do we go for months and months with relatively low levels of transmission in India, only to see this past two months is major increase? And now the same thing is happening here in Africa. It's also of concern that we now know that the Delta variant, which I'll talk more about in a moment, has been reported in 14 African countries and the alpha and the beta variants also, which I'll talk about, have been found down over 25 African countries. Moving on quickly to Asia and the Middle East. The seven day average for new cases in the region has dropped from 500,000 in early May to 150,000 now, largely due to less activity in India. However, numerous countries in the region are struggling with surges: Afghanistan, Indonesia, Kuwait, Mongolia and Vietnam. All are reporting record high cases. According to a June 19th Associated Press article, 65 percent of the tests in Afghanistan are coming back positive in some regions. In late May, the country's health minister described the latest surge as a crisis. The seven day average for new cases has doubled since that time. Reports of oxygen shortages and hospitals rationing supplies are widespread. Moving to Israel, looking now at a country with vaccination levels of 61 percent, having one or more doses, 57 percent being fully vaccinated. Great news is that there were no covid deaths reported in the country since June 13th. However, what we're beginning to see is the impact of the growing number of individuals infected with the Delta virus. 70 percent of the country's new infections are Delta. 50 percent of the cases occurred in children, and one third of the cases have been vaccinated, including nine staff members in a school outbreak. In response to the cases, Israel has extended border closures and is now hoping to vaccinate more 12 to 15 year olds who become eligible earlier this month. Keep this in mind as we talk about the United States and what's happening here and the potential role that kids may play in the transmission of the virus. Just to round out with Europe, overall activity through Europe remains low, with the seven day average of new daily cases falling from greater than 200,000 in late May to about 35,000 now. Despite this turnaround, however, and

activity experiences in the UK, Portugal and Russia are raising concerns about the Delta variant and what it might mean for the rest of the world and the US moving forward. For example, in the UK, where, again, vaccinations are high. 65 percent of the population with one or more dose. 47 percent fully vaccinated. According to Public Health England, over the past week, cases have increased by 34.8 percent and a seven day average of about 10,000 cases. Hospitalizations have increased by 35 percent, with more than o1,400 people admitted and deaths have risen by 45 percent, although less than 100 deaths have been reported over the past week. And the seven day average remains at about 11. From the Public Health England reports, we know that greater than 90 percent of the cases in the UK are the Delta variant. Most of the Delta infections are occurring in unvaccinated individuals. However, one in 13 of the Delta cases are in fully vaccinated people, and 48 percent of Delta hospitalizations are among the unvaccinated and one in 12 are among the fully vaccinated. Early data continues to suggest that Delta could be associated increased disease severity. The secondary attack rates or the number of people who become infected from exposure to a case, supports about a 40 to 60 percent increase in transmissibility of the delta compared to the Alpha. Alpha is the virus we've talked a lot about in recent months with regard to transmission around the world. One issue that is of concern has been the vaccine effectiveness against symptomatic disease among those in the United Kingdom. Public Health England has just shared with us the fact that if you look at the Alpha variant, with one dose of vaccine, the protection was about forty nine percent, with two doses it was eighty eight percent. If you look at the Delta variant, one dose was only thirty one percent effective, with two doses about 80 percent. Now it is true that vaccine effectiveness, however, against hospitalizations, which is a key measure of what we can hope to accomplish with these vaccines. With Alpha, one dose is about 78 percent, two doses 92 percent protection. With Delta, it was one dose of about 75 percent, in two doses about 94 percent. So while the single dose with these vaccines may not provide you with anywhere near the same effectiveness in terms of preventing disease, they do at this point with Delta, clearly reduce the risk of serious illness. Let me just close out with a couple of the last countries here in Europe. If we look at Portugal, where vaccinations 47 percent have one or more doses, 26 percent of the population are fully vaccinated. Overall cases in the country remain low, especially compared to the January surge. But the country's Health Institute is reporting that 60 percent of the new cases in Lisbon, which is fueling most of the countries increase at this point, are Delta. That's up from eight percent in May. Hospitalizations are also up in the region, but

officials are hopeful that the levels won't reach those recorded earlier this year. As a precaution, all non-essential travel in and out of Lisbon was banned this past week. You may have heard about Russia and what's going on there. This has been a real challenge in terms of the number of cases. If we look at vaccination rates, 14 percent have had one or more dose, 11 percent of the population are fully vaccinated. These low rates are attributed to deep skepticism and hesitancy to get the Sputnik vaccine, which, according to early studies, suggested it was a highly effective vaccine. But there has been new concerns raised about, in fact, if that's true. Cases and deaths are quickly rising in the country, primarily due to record high activity in Moscow, where the mayor recently announced that 90 percent of the cases are the Delta variant. So what this really is all pointing out to us is the fact that we're continuing to see this transmission show up in different countries and different regions of the world at different times. Two points to make about that. This is going to continue as long as we have an absence of widespread vaccine campaigns throughout the world. Particularly in the 6.4 billion individuals that live in low income countries, this can be expected to occur and on an ongoing basis. Why is this important? It's the variance. Where we see these ongoing epidemics at a country level, we're going to see more variance spit out and end up spreading around the world. So it's really important we in this international transmission. So when I hear people talk about the pandemic's over in the United States, please understand we may not feel the thrust of it here now. And that's understandable. But the risk of these variants coming back to this country from around the world because we've not taken care of the rest of the world is a huge issue and that we're really going to have to grapple with that over the months ahead of how are we going to vaccinate the world. And we'll talk more about that in a moment.

Chris Dall: [00:20:38] So, Mike, you just gave some of the data on the Delta variant, is Delta destined to become the dominant variant worldwide?

Michael Osterholm: [00:20:47] I think there is universal agreement among the covid-19 experts that the Delta agreement is by far the most dangerous sars-cov-2 mutation, a variant that we've seen to date. If you look at what data we have from sequencing the viruses around the world, we know that it's in at least 70 countries now. It appears to be dominant in Canada, Indonesia, Pakistan, Portugal, Russia, England. It just seems to continue to spread at a rate that is commensurate with what we see with this 40 to 60 percent increased transmissibility over that of the alpha variant, which we used to call

B117. So I think there is nothing that will keep it from not becoming the dominant variant around the world. Now, having said that, let me just also come back and add a real dose of humility here, because remember, I'm the same person that said to you back in January and February when B117 was emerging in Europe and we were beginning to see it start spreading here, and the CDC projected that by April it would become the number one variant here, which did happen. This was also a highly infectious virus, still is, which we didn't see it take off in the United States like we expected. We had cases only in Michigan and Minnesota commiserate with what we might have seen in Europe. So this is a real question in terms of what will happen. We know it's here. We know that to date we're up to about 12 to 18 percent of all the viruses are the Delta variant right now in the United States. And that seems to be growing very, very rapidly. So I think that it's fair to say that it's going to take over here. I think it will take over the summer. I still challenge the notion that some have that, in fact, this is going to be a seasonal event, that not much will happen this summer and we will see much more activity this fall. I don't think there's any evidence yet of seasonality, as far as I'm concerned, either in the northern or southern hemispheres. I just went through a laundry list of countries on either side of the equator that were impacted in a major way over the recent months. So I think that we're still too early to think this is going to be seasonal. I think that it's very possible we could see an increase in cases, particularly in those areas under-vaccinated in the United States. And having said that, we could have a Delta summer yet that would be a challenge in some localized areas. Again, we're not going to have a national surge. We have enough people vaccinated that that's not going to happen. But we could have some major activity in various areas of the country and is all the more reason why we have to get people fully vaccinated. The other thing is we'll talk more about in a moment, but the issue is the protection the vaccine provides. I noted that a moment ago and hinted that, in fact, yes the variant was of real concern because with only a single dose of vaccine, the effectiveness or protection from the vaccine was surely minimized. So the world has to be aware that this delta is here. It's coming, if it isn't already in your country. And I do think that within a matter of just weeks we will see this as the number one variant around the world.

Chris Dall: [00:24:09] So I mentioned the global vaccine disparity in my introduction, and you've talked about this issue and why it's important frequently on the podcast. The recent meeting of G7 leaders ended with a pledge to donate one billion vaccine doses internationally, half of them to be delivered at the end of the year. Now, there is a lot of

celebration of this announcement, and this is clearly a step in the right direction. But how much of a difference will this make?

Michael Osterholm: [00:24:34] Well, every dose of vaccine is a gift to us in terms of fighting this virus. The challenge is, you need a lot of gifts to really have a major impact on this virus transmission. And so I just remind people, again, there are 6.4 billion individuals who live in low and middle income countries. And to date, we've seen only very limited vaccine available for these countries. Less than one percent of sub-Saharan Africa has been fully vaccinated. And with a population of one point three billion, Africa as a whole has received just forty one million doses of the 2.5 billion doses that they've ordered. Parts of Africa halting vaccination campaigns right now due to limited or no supply, has warned of the numbers of covid-19 cases that have risen for these past recent weeks will in fact become a real challenge without a vaccine. If you look at the other countries of the world in the low and middle income categories, the same challenge is there. In an article in The Guardian by Gordon Brown, the former prime minister of the U.K., he recently said at least 11 billion vaccine doses are needed to guarantee all countries of the same levels of anti covid protection as the West. Without that, worldwide coverage of the disease will continue to spread, mutate and return to threaten even the vaccinated. It is an undeniable fact that all of us will live in fear until no one lives in fear. So providing vaccines is not just an act of charity, it is a form of self-protection, perhaps the best insurance policy in the world. I think most of you recall that we've been talking about COVAX, which has been this WHO supported effort to try to get vaccines to the low and middle income countries as well, of course, those in the high income countries who have yet to have access to the vaccines. But if you look it over the two billion covid vaccine doses administered worldwide, so far, COVAX has been responsible for less than four percent of those doses. And that's because, again, most of them have gone to the high income countries, places like the United States and Europe. And so this is going to be a challenge. I mean, just to give you some sense of this, today, 10 countries have administered 75 percent of all the covid-19 vaccines. But in poor countries, health care workers and people underlying conditions, the elderly population cannot access the vaccines. So I want to congratulate the G7 for focusing on this. But it seems to me it's much of the same celebration as it is to take a garden hose to a forest fire. We need a lot more vaccine. We have to understand again, there are also severe challenges with regard to once the vaccines are manufactured and distributed, how in many of these low and middle income

countries can we count on reliable refrigeration freezers so that the vaccines are not lost? But I think the message is here. Thank you, G7, for emphasizing this, particularly the United States leadership. But our response is woefully inadequate. And we've got to think big in a way that we haven't thought about. We need a new Manhattan Project on making vaccine. We need a Marshall Plan to deliver it. And as I've said time and time again, this is not just a humanitarian issue. It is that and it should be. But it's also one about strategically protecting our vaccines that we have throughout the world, because as these new mutations, these new variants spin out, those are what are going to threaten the integrity of our vaccine. So COVAX is not enough, not nearly enough, but it's a start. And there are a number of us who will continue to do whatever we can to support a much expanded manufacturing and distribution process for these vaccines.

Chris Dall: [00:28:33] Meanwhile, here in the US, the seven day average of new daily cases is around 11,000, which would have seemed unthinkable back in January, the mood of the country is essentially that this pandemic is over. But the Biden administration acknowledged this week that the country will not meet the goal of 70 percent of adults having at least one vaccine dose by July 4th. Many states are well below 50 percent vaccination and the prevalence of the Delta variant, as you mentioned, is on the rise. Jeffrey Duchin, health officer for public health Seattle and King County, recently told The Wall Street Journal, I think the eulogies are a bit premature. Mike, do you agree?

Michael Osterholm: [00:29:10] Well, first of all, let me just say that Jeff is one of my most respected and dear colleagues, I listen to him very carefully. He is a voice of great reason and experience. And I would agree 110 percent with his assessment. I think that we have come to the point of the pandemic's over in the United States far too early. Now, some of you say, well, that's what I expect you to say. You know, you're always bad news, but let's just look at the data. Let the data drive where we're at right now. I want to start out by first acknowledging that the media this week is going to continue to focus on we missed the goal that the president set of 70 percent of the adult population vaccinated by July 4th with at least one dose. It's close. It's right now right around 66 percent of those 18 years of age and older have had at least one dose. 56 percent having two doses. Now, to me, whether it's 66, 67, 68 or whether it's 70, the margin of error is such that that really doesn't change. Now we're down to splitting to say of those 27 years of age and older by July 4th we'll have 70 or more. I hope we don't just keep

focusing on this. The 70 percent number was an aspirational goal set up by the administration. I just take a step back and say they didn't fail. What they have done to get vaccine made, delivered, available and promoting its use in this country has been remarkable. I really want to commend this administration for what it's done. The fact that we're not at 70 percent or 80 percent or everyone fully vaccinated to 70 percent, it says more about us as a population than it does about the administration or what they're doing. You know, there's that old line. You can lead a horse to water, but you can't teach it to drink. In this case, the administration has made it possible to have high levels of vaccination in this country. It's our choice not to, which we have to deal with. And why is that? Because as I have said over and over again, and particularly if you look at this virus, if you are not vaccinated, eventually this virus will find you, it will find you, and you can deny that. You can say, I haven't been infected yet. I don't think it's real. You know, that will last so long. Let me just again take a very quick snapshot look at where we're at in the United States. And the fact of the matter is, there is no single number that will tell you at all where we're at. What I mean by that is it's that old adage I continue to use. If your feet are in the freezer, your head in the oven, on average, your temperature is just right number. And take, for example, when we look at our population today, I mentioned that 66 percent level for those 18 years of age and older had a single dose, is 63 percent for those 12 years of age and older and only 54 percent total for everyone. Well, of course, young kids can't be vaccinated yet. So, you know, you can argue that's not a fair number, but it's a fair number looking at the potential for transmission of the virus, because as I just pointed out in Israel, these young kids are playing an important role in the transmission with the Delta variant. If you look at fully vaccinated for those over 18, I mentioned only 56 percent, just a little more than than half the population of adults. What this means is these are only partially vaccinated individuals. And what did I just share earlier with the Delta variant is in England, we're seeing 30 to 35 percent effectiveness in preventing disease with a single dose of vaccine when the mRNA vaccine is being used. So to me, that number is important relative to saying almost half the population is in this country still vulnerable to a Delta variant infection. Hopefully it'll be less severe for those who have had at least one dose. If you get down to 12 years of age and older, only 53 percent are fully vaccinated. And generally across the entire population, only 45 percent. So these numbers tell us that just like has happened in England, just like has happened in Israel, where this variant takes off, we could still see substantial activity. I've said it once. I'm going to say it again because I want to make sure people hear this. We are not going to have a big national surge with these kind of

numbers, but we are going to have, I think, localized regional surges in cases. We're even beginning to see that right now in parts of Missouri and Colorado and the delta variant is going to be key. Let me get to a more granular level. Right now if you just take those states where less than 40 percent of the population has even a single dose, there are five of them, Idaho, Wyoming, Louisiana, Mississippi and Alabama. If we look at those states where there are less than 40 percent of the entire population vaccinated fully. We have 18, Tennessee, Arkansas, Louisiana, Mississippi, Alabama, Wyoming, Georgia, South Carolina, North Carolina, West Virginia, Oklahoma, Texas, Utah, Idaho and North Dakota. Any one of these states could have a substantial increase in cases and a localized or regional outbreak. And so our job is not just to hit a number, but we want to do is actually hit what is it going to take to protect our populations, and I think that's what we have to get off of, whether it's 70 or 80 percent. Now, I know that the numbers are important in the sense that they are all about a goal. But I worry that we're going to get focused on the 70 percent. And I'm telling you right now, that's not the number. The number is how many people can we get fully vaccinated? Close to 100. Not going to happen, but we've got to get there. So I think that's the focus that the delta is driving. And I just want to point out that I think we're already beginning to see some of what I've just been talking about. If you look right now, there are five states that have had a 14 day increase in cases. All five of these states had fewer than 40 percent of their population fully vaccinated that I just mentioned, including even less than 50 percent receiving even a single dose. If you look at Missouri has had a 55 percent increase in cases over the last 14 days. As I mentioned before, only 38 percent of the population is fully vaccinated. Oklahoma has seen a 53 percent increase in cases over the last 14 days. 37 percent of their population fully vaccinated. Arkansas, 46 percent increase in cases in the last two weeks, 31 percent fully vaccinated. Utah, 24 percent increase in cases, 36 percent of the population fully vaccinated. And finally, Arizona, where we've seen an eight percent increase in cases and only 39 percent of their population fully vaccinated. So the next few weeks are going to be very important. We'll find out. Are we going to have this summertime activity some speak about as not likely to occur, whether the fall peak? I think it's surely possible we could see increases in cases right now. But any way we look at it, whether it's now or the fall, we have a lot of people yet to get infected or vaccinated. And that's going to be a challenge.

Chris Dall: [00:36:39] Many colleges and universities across the country are mandating that students be vaccinated for the fall semester, but the University of Minnesota

recently announced that it would not mandate vaccination. And you have a new editorial in our local paper, the Star Tribune, in support of that decision. Now, we'll have this posted on the website. But, Mike, can you summarize your argument for our listeners?

Michael Osterholm: [00:37:01] Well, let me just start out by saying that this article, which was published in today's paper, but online last night, has evoked a tremendous response and it's been an interesting one. Let me go through the op ed briefly with you and then make some summary comments about the response that I've received to date. I co-authored this with Michael Oakes, professor in the division of genealogy here at the University of Minnesota and also the acting vice president for research for the university, a very dear and trusted colleague. And it's been proposed by others, an op ed that was published in the Star Tribune newspaper last week. And that op ed piece strongly supported the need to mandate covid vaccine at the University of Minnesota. Now, I think everyone on this podcast hopefully knows there has been no one who has been a stronger supporter of covid vaccine than me. I worked hard on it over the last year trying to help support this actual research, discovery, manufacturing, delivery, messaging, the whole thing couldn't couldn't be a stronger support. But I'm also somebody with 46 years in the business and I'm very practical. And I sit there and say, you know, there's two ways to get from point A to point B and I want to get there the fastest and most economical and safest way I can. There's no time for a scenic route that may be much longer. Interesting, but much longer. Well, let me just point out that when one looks at the concept of a mandate, first of all, in a public institution like a university, that's all about what are the laws that provide you the ability to do that? And can, in fact, you mandate something in such a way as to make it happen? The vast majority of people in this country don't realize that any kind of public setting, you cannot mandate anything around a health issue like this short of providing the way for which someone can opt out, whether it be through religious beliefs or even just personal conviction. And Minnesota is no different. Our Minnesota statue here, 135A.14, makes it very clear that any mandate that the University of Minnesota would put forward for any kind of vaccine is one that anyone who does not want to abide by it, whether for religious reasons or other, can get basically an exception to do that. And a mandate is not some kind of magic action that means everyone will get vaccinated. Well, we already have had challenges with regard to the current vaccines. We have mandated measles, rubella, mumps, diphtheria, and tetanus, but not to the extent that we've seen anything like covid. Covid has rewritten the public health playbook in terms of what this

all means. So the whole issue of putting forward a mandate by itself does not accomplish getting people vaccinated necessarily. Well, let me break that down. What we talked about in our op ed piece, there really are three groups of individuals today who fit into the vaccine recipient pool. One are those that I call vaccine affirmative. These are the people who couldn't wait to get the vaccine. They've gotten the vaccine. They're fully vaccinated. Then we have the vaccine hesitant. This is a middle group who basically says, no, not right now. I have concerns about this. I'm, for example, a pregnant woman. I'm not sure what this will mean for the safety of my unborn child. I'm someone who thinks this is still an experimental vaccine not approved yet by the government. Any number of reasons why they won't get it, but they're not anti vaccine. And then you have the third category call vaccine hostile. The vaccine hostile reject medical and epidemiological research on covid-19, they deeply mistrust the vaccine research, and they don't trust scientific authority or even the government. You know, vaccine mandates are not needed for the first group, the vaccine affirmative, they're going to get it. Surely it's not going to make any difference on the vaccine hostile because they're just going to take the exception, they can just sign one sheet of paper and get that done. Is that middle group, the vaccine, hesitant the people who still are willing to get vaccinated if they find that the safety of the vaccine or the concerns that they have are met? Well, I believe very strongly that if we, in fact, get into a battle war with the vaccine hostile and we get into litigation, just like Indiana University did starting two days ago, where with the same mandate that we would put forward, they are now being challenged. And this is going to create a very negative atmosphere on any college campus where this happens. So rather the wise person I believe would say, well, what is this middle vaccine hesitant group look like? We've actually done a survey of students, faculty and staff at the University of Minnesota. It was 12,500 individuals were surveyed. 51 percent of the sample return their survey form. I'll talk more about that size in a moment. But what is interesting is if you look at the overall response, 93 percent of the respondents indicated they had received one or more doses of the vaccine. Undergraduate students had a lower rate of about 87 percent, but 53 percent of those said that they indicated on plan on getting vaccinated soon. This would bring their rate up to 93 percent. Faculty led the three groups with 99 percent vaccinated. Only 2.3 Percent of the respondents do not plan on getting vaccinated and one percent are unsure. Now, yes, this was a sample size of 51 percent. 49 percent of the sample that didn't respond could surely represent only the hesitant and hostile. But when we look at this and try to analyze it within the surveys, we've done a few. We think that this is

actually a pretty good sample and it may not be that only a few percent are in that vaccine hesitant position, but it's not large numbers. So from this perspective, we at the university have put together a very comprehensive, authoritative outreach program to get to any number of different individuals for whatever reason, race, ethnicity, gender, life experience, political party, whatever, to try to reach out and give them the kind of information that they want and need to make a better decision. For example, we know that if you work with pregnant women who have a legitimate real concern about the safety of the vaccine with their unborn child, when you share the information of the safety of the vaccine and point out that the, in fact, real risk to their unborn child is in contracting covid-19 while they're pregnant suddenly has a big influence on whether they'll accept or take the vaccine. And so our whole approach was to say, you know, if we take this on as a mandate, one, you don't accomplish what everybody thinks. I've had multiple professors in the last couple of days come to me and say I want to completely vaccinated classroom. Mandate this and it will happen. And I'm thinking, how naive can you be? If you are someone who wants to take an exception, you can. And it's not because the university doesn't want to share information, but by HIPAA laws, we can't tell you who is vaccinated and who is not. So you can't you have to assume every classroom is going to have unvaccinated people in it, even with a mandate. So when you look at this issue and try to put it together here, I believe that the way we will best get the most number of people vaccinated is not to mandate it, not to get into that ugly, very difficult situation of individuals disagreeing with that approach. But then at the same time, not having to get vaccinated anyway because they can take the exception. But working with the community to work on that middle group, the vaccine hesitant, knowing we're done with the vaccine affirmative will never touch the vaccine hostile. And knowing that even under these conditions, if we got everybody who is vaccine hesitant to get vaccinated, we still have the vaccine hostile. And that would be the same whether they were there was a mandate or not. And you're going to have to assume that they're going to be on campus. So I think this is the challenge because, I mean, it's been amazing to me how many people have responded saying that I've sold out to the anti-vaxxers. No, I'm trying to be wise. I'm trying to get as many people vaccinated as possible as quickly as possible. And the way to do that right now is to really reach out to those who have yet to be vaccinated, help them understand why this is so important and not get bogged down in litigation. Don't come to me any more with your stories about your demand to have your entire class vaccinated. It isn't going to happen under any conditions. You know, don't tell me about the fact that at this point we're now

sending a message to people, it's not important to get vaccinated. We are stepping up every effort we have to get people vaccinated now. So it's interesting, I have to say that we often in the science world somewhat, how shall I say, take and categorize those on the far fringes of what some would call the bell curve of public health opinion. And some would say among those from red states or red districts or whatever political world you come from, how extreme they are, how an anti-science they are. And I'm going to really probably end up upsetting a lot of people. But, dammit, it's you got to tell the truth. I'm seeing the same thing from the blue side, the far side over here. You're with us if you're for a vaccine mandate, you're not if you're not, and no amount of discussion, reason, etcetera, about the approach you're taking to try to maximize is worth a discussion. So we'll see. This counterpoint is also published on the website here. I hope you'll go back and read it, take a look at it. And I hope you see the every every ounce of my being is in this to get us vaccinated. And if it means people are really upset with me, so be it. Michael and I've had some of our dearest friends and colleagues send us emails in the last day saying how disappointed they are in us. You know, I, I that hurts. But at the same time, you know what leadership is not about whether you're hurt or not. It's about getting results. And I hope that this op ed piece begins to focus on what are the ways to get the most effective, best result.

Chris Dall: [00:48:23] Now to our covid query segment, this is where we try to answer questions about the decisions that you, our listeners are trying to make, the situations you're trying to navigate and the risks you were assessing on a daily basis in this post-vaccination covid world. Our first covid query, this episode is from John, who wrote "You've said many times that the covid-19 vaccines are like fireproof suits, 90 to 95 percent effective. I've misinterpreted this analogy to mean that vaccines fail to protect us five to 10 percent of the time. According to the CDC, the rate of failure is less than 0.01 percent, less than one in 10,000. Would you say something about vaccine effectiveness, how it's determined and what it means? Also, please say more about how my fireproof suit becomes more protective or effective as more people are vaccinated."

Michael Osterholm: [00:49:12] Thank you, John, for that very thoughtful question. Let me try to separate out the concept of breakthrough cases and vaccine effectiveness. Breakthrough cases are, in fact, those individuals who are fully vaccinated who then develop infection, whether it be asymptomatic, all the way to severe infection and death. But remember, the only way that a vaccine protect you is if, in fact, you're exposed to it.

And among the many, many millions of people in this country who are being vaccinated, only a small percentage of any one day will actually be exposed to the virus. So a vaccine that works 90 to 95 percent of the time means that when you are exposed, you could go for months and not be exposed. And in fact, then at the moment you are, does a protect or not? Whereas the breakthrough cases are what happens every day. They're the people who are vaccinated and exposed. So these numbers are not necessarily inconsistent. Let me just take a moment to talk about breakthrough cases. As of today, the CDC is reporting 10,262 total breakthrough cases in 46 states and territories. These numbers are only through the end of April. We know that they are quite incomplete. For example, just if you look at the numbers of cases in our state, in Minnesota, you'll see that, in fact, we have here well over 3,000 breakthrough cases, which we are surely not disproportionate to where other states are also. So this is just what gets reported to CDC. Let me just focused on the hospitalized or fatal covid cases reported to CDC. There are now 3,729 such patients from these 47 states and territories with breakthrough infections. These numbers are current through June 14th. Of the individuals who are fully vaccinated, a full 549 have died as a result covid. Now that seems very different than saying that, you know, if you get fully vaccinated, you're perfectly safe. At most, you may have a mild illness. That also doesn't address the fact that about 2,600 of these individuals were hospitalized due to covid infection following their full vaccination status. Now, a number of these are individuals over age 65 up to almost 80 percent are. These are the individuals of the frail elderly, often the ones that we also see with influenza vaccines having breakthrough infections and some very severe. So the important point to note here is, that don't take the number of breakthrough cases reported to CDC as the total number of people who are infected with the virus after having been fully vaccinated. That's just what gets reported, as well as the fact that, again, I could be vaccinated today, have a vaccine that prevents me ninety five percent of the time from getting infected, but I only get exposed once in the next six months, meaning that therefore you wouldn't expect every day the vaccine to impact on the population vaccinated and only work 90 to 95 percent of the time. I want to put into context these breakthrough cases. This still is a very, very different picture than if you weren't vaccinated at all. The numbers would be much, much, much higher. So I think the point that I want to always emphasize is that once you're vaccinated, you still have some responsibility to yourself, not to anyone else, to yourself to help protect yourself. Don't put yourself in harm's way. Now, we have a challenge in this country right now because we continue to see large long term care facility outbreaks occurring

throughout the country, not because the residents aren't vaccinated. They are. But we have a number of workers who are not vaccinated and those are the people we need to get vaccinated. Unlike my previous comments on the issue around students, faculty and staff, when you're working in the health care, I think that the compelling reasons for mandates and not letting someone work if they don't in fact comply with vaccination is a legitimate point. And right now we have real challenges in long term care in this country where we continue to see these outbreaks, we see the breakthroughs and the older populations whose immune systems are not as protective. And we have got to address that issue. I hope this answers the question that breakthrough cases are very important, and they are consistent with the idea of a vaccine this 90 to 95 percent effective.

Chris Dall: [00:53:56] Our next covid query comes from Steve, who asks, "listening to your previous two podcasts, I'm not sure what message you're giving when you say you, a fully vaccinated person, do not want to be inside a restaurant with an unvaccinated person. The prevailing sentiment in the news is that if vaccinated, you have almost zero risk of covid infection or a serious case of covid if infected. I could perceive this to mean that, you know, vaccines are not as effective as they are being presented and the likelihood of contracting covid and severe illness is still of concern to you. Or I could see the case where a vaccinated person with a health history that puts them at risk of severe covid should still be concerned." So, Mike, can you clarify for Steve your concerns about being in a restaurant with unvaccinated people?

Michael Osterholm: [00:54:41] Well, thank you, Steve. This is a very important point. As we've discussed in previous podcasts, how one perceives risk and what they feel is their level of comfort with that risk is obviously important to each and every one of us. And it's going to vary. There are some people who would argue that if I knew every day that 35,000-38,000 people are going to be killed in an automobile accident and I'm out driving, what's my risk? Should I be driving or not? I think most of us would say that doesn't keep us from going out. We assume this risk. We put it in our risk perspective and go with it. On the other hand, if we are out golfing and a major thunderstorm appears and lightning is everywhere, we have a very different sense of what it's like to get struck by lightning. Even though we don't know anybody who has we don't want to be on that golf course during that lightning storm, again, without even objective numbers, it's that risk perception. So what I was really talking about here is in part related to the point that I just made about the breakthrough cases. Remember, as I've

said many times, these vaccines are 90 to 95 percent effective, meaning that if I'm in a bar or restaurant, I get exposed, I can expect it to protect me 90, 95 percent of the time. Now, however, I'm someone who is immune deficient, one of those 12 million plus Americans who for whatever reason, whether it's through the drugs I have to take or the recent illness that I had, challenges to my immune system, I am more likely to become seriously ill if I get infected and even to the extent of possibly dying, even though I have been fully vaccinated at that point. You have to factor that into your risk. Do I feel comfortable being in that restaurant if I have a 90 to 95 percent chance of being protected but a 5 to 10 percent chance of not being and I think this is where we all are wrestling with right now, what is our level of comfort? What do we feel comfortable with? And particularly now with the new variants coming in with the Delta issue, if we see surges in cases, will it be different? This week in my community versus what it might be in five weeks in my community? I think this is all true. So this does not suggest that some of us know more information about how safe these vaccines are. This is all the same data we've ever talked about, but it's about level of risk. And I just hope that we can help each other work through this. So I think we're all still struggling with how to measure this concept of risk on our heads. It's not going to be about an empiric issue. It's going to be I do not believe I'm at greater risk of having serious disease. If I get infected, the vaccine will likely allow me to have only mild infection. And so therefore, I'm comfortable being in a restaurant or a bar. But others will say, no, you know, I have an immune deficiency that I worry about. I have an 84 year old grandmother. Do I want to take to that birthday reception at the restaurant knowing full well that she may be at increased risk of serious illness if she does get infected with that 90, 95 percent protection. So I hope this gives you a sense of the fact that we're always going to have risk. Even with the current vaccines, none of these vaccines are going to be a hundred percent protective. And then we have to ask ourselves in how comfortable living with the consequences of getting infected if I'm in a setting where I intentionally are putting myself at increased risk of exposure.

Chris Dall: [00:58:20] Now to our acts of kindness, and we received a very nice note recently from a school nurse, can you share with our listeners, Mike?

Michael Osterholm: [00:58:29] Yes, this is from Jana and I thank you so much for sharing this. And needless to say, the outcome was well deserved for you. Jana wrote, "I'd like to submit an act of kindness that I am blessed to be the beneficiary of. I am the

one and only school nurse in our small rural district. I was also the designated covid-19 coordinator for the school year. It has not been an easy year. The summer was spent developing plans for the school year. Many weekends and extra hours were spent contact tracing. Some people have not been happy with the mitigation strategies we were required to implement and they have not been kind about it. Our district has two buildings, and for nurses week they spoiled me like crazy. There was cake, gifts, signs signed by the staff and every elementary student, and even a song sung to me by the music teachers. I didn't feel worthy of all the attention, but the support and encouragement were much appreciated. I would encourage every parent to reach out and thank their school's teachers, secretaries, principals, janitors, cooks, support staff, social workers, superintendents and school nurses. It hasn't been an easy year, but they've worked hard to make it a successful year." Thank you for that very, very thoughtful note. You live in a great community and I congratulate you on what you've done and the kindness of all the school staff and students in supporting you in that effort.

Chris Dall: [01:00:00] And to our listeners, please keep your acts of kindness and your questions coming, and you can also now send us stories about special, beautiful places that you've been to that are important to you. You can email us at osterholmupdate@umn.edu. Your closing thoughts today, Mike.

Michael Osterholm: [01:00:19] Well, first of all, thank you for returning to the podcast. I hope that today's information was helpful. I know it's not easy and sometimes it's even challenging to try to put the whole pandemic together in terms of what we're trying to do and how we're trying to achieve the most impact on the transmission of this virus. I'd like to share with you an article that appeared in this week's issue of STAT, a news service that we rely on heavily for much of our information here. And this particular piece, I think, really speaks to where we're at right now. And it surely spoke to me both in my head and my heart. This was written by Dennis Charney. Dr. Charney is actually a psychiatrist and the dean of the Icahn School of Medicine at Mount Sinai in New York. In 2018, he was a co-author of "Resilience: The Science of Mastering Life's Greatest Challenges." And I'm going to share this piece with you. It'll be on our website so you can go back and look at it and get it. But I think its message is really one that all of us would do well to listen to and try to implement into our own lives. Here's Dr. Charney's words. One morning, almost five years ago, a disgruntled former employee tried to kill

me with a shotgun as I walked out of my local deli. The buckshot pellets from the blast pierced my right shoulder and chest. Blood gushed from the wound. I learned later that the shot would have killed me had it landed a few inches to the left. I had studied trauma victims for decades to understand resilience and find new treatments for mood and anxiety disorders like depression and post-traumatic stress disorder. Now, I was the trauma victim lying in the intensive care unit of my own hospital. I struggled to find my own resilience. I would have to take my own medicine by applying what I called the resilience prescription to my personal trauma. People who bounced back from traumatic events generally do so with an active approach to recovery, even creating a sense of mission that fuels a positive attitude. So I set a goal. I was scheduled to deliver a speech approximately two weeks after the shooting to the new medical students at the Icahn School of Medicine at Mount Sinai, where I am the dean at the white coat ceremony, a momentous event where students receive their white doctor coat. I pledge to myself that I would return to the school and deliver the speech. That mission and a determination to move forward with the support of my family and friends enabled me to deliver the white coat address. I think it was the best speech I've ever given. Accomplishing that goal fueled and accelerated my recovery. The world is reeling from the global trauma of covid-19, and people in every country are trying to emerge and recover from this pandemic. It won't be easy, especially for those who have lost loved ones black, Latino, low income communities disproportionately devastated by the pandemic, and individuals who continue to suffer long term physical symptoms of covid-19. There is no magic formula for bouncing back. Full recovery by its very nature, is slow and gradual and every person is different. But humans have a remarkable capacity for resilience. For anyone trying to recover from the trauma of covid-19 goal-setting can be an effective strategy. By shifting the focus away from the trauma towards the future and an achievable mission. For some, the goal may be mustering the strength to return to the office, to reopen a shuttered business. For others, it may be something more personal, like gaining a new appreciation for time spent with family, getting in better shape and losing those pandemic pounds, or being more charitable by volunteering every week at the local food pantry or a school. An ideal plan since altruism is strongly tied to resilience. As individuals, we can't control the pandemic, but we can control our reactions to it. Working to maintain a positive attitude, find a resilient role model, and nurture a supportive network of friends and family. All elements of the resilience prescription, they're key steps in the process of recovery and resilience. Bad things happen to good people. Loved ones die, relationships fail, careers suffer setbacks. No

one goes unscathed. And now we have the shared trauma of a pandemic, an experience who will always be part of us. Yet personal growth can come from this. In different ways, large and small, many of us have been part of the covid-19 resistant. Frontline health care workers who risk their own lives to save the lives of others, grocery clerks, factory workers, public service employees and others who kept their cities running, caregivers who nursed ill family members, those who shop for their families and neighbors, and those who diligently kept wearing their masks. Each of us will remember our personal battles against the pandemic, and if we look back with a sense of pride, this can become part of the healing process. The great novelist Ernest Hemingway, who was severely injured in World War One, recognized the power of resilience when he wrote the world breaks everyone and afterward, many are strong at the broken places. Anyone who has had a brush with death as I did or who has suffered deep trauma can be resilient. If we can learn from it, incorporate into who we are, and move forward with our life and aspirations, we can ultimately become stronger from the experience. Thank you, Dr. Charney, for those incredibly thoughtful words. We will get through this together. We're not done yet. We're not done. We're coming a long ways. Get vaccinated, please. Get vaccinated, help others get vaccinated if you are and they're not. And just know that one of the things that will get us through this is just being able to share these moments together, understanding what Dr. Charney just shared with us about the importance of resilience. So thank you very much again for another podcast. We look forward to seeing you in two weeks and be safe, be kind. Thank you.

Chris Dall: [01:06:46] Thanks for listening to this week's episode of the Osterholm Update. If you're enjoying the podcast, please subscribe, rate, and review. And be sure to keep up with the latest covid-19 news by visiting our website CIDRAP.umn.edu. The Osterholm Update is produced by Maya Peters, Cory Anderson and Angela Ulrich.